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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/666,476

09/19/2003

Sujit Sharan

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12/01/2006

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EXAMINER

SMITH, NICHOLAS A

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,476

Applicant(s)

SHARAN, SUJIT

Examiner

Nicholas A. Smith

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1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 10 and 16-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 10 and 16-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 September 2006 has been entered.

Response to Arguments

2. Applicant's arguments, see p. 6 lines 5-13; filed 20 September 2006, with respect to claim 9 have been fully considered and are persuasive. The 35 U.S.C. 112 of claim 9 ("a rear surface of") has been withdrawn.

3. Applicant's arguments with respect to claim 9 have been considered but are moot in view of the new ground(s) of rejection.

Status of Claims

4. Claims 9-10 and 16-28 remain for examination.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not support "a polishing pad having properties that may be changed by a power supply to optimize polish rate and polish selectivity for different materials where the properties include: hardness, stiffness, porosity, abrasiveness, and absorbance." Examiner agrees that paragraph [0012] supports that operational variables can depend on the properties of the polishing pad, such as hardness, stiffness, porosity, abrasiveness, and absorbance. Examiner agrees that paragraph [0022] supports that operational variables can depend on the properties of the polishing pad, slurry composition, and voltage or current applied between a polishing pad and a wafer power supply. However, there is no support saying that polishing pad properties can be changed by a power supply.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9, 10 and 16-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uzoh et al. (US Patent 5,807,165).

9. Regarding claim 9, Uzoh teaches an apparatus comprising:

- a polishing pad (64) mounted on a platen (62);

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- a segmented cathode (64C) disposed between the platen and the polishing pad (see Figure 11C);
- a slurry disposed on said polishing pad (74);
- a wafer (W) disposed on said polishing pad and said slurry, said wafer mounted in a wafer carrier (66);
- a power supply which applies a voltage between the polishing pad and the wafer (80, see column 5 lines 10-13; note that applying a current inherently implies applying a potential)
- a computer to vary the voltage (column 5, lines 23-33).

10. In regards to claim 9 feature "a segmented cathode disposed between said platen and a rear surface of said polishing pad," Uzoh et al. teaches a segmented cathode disposed between said platen and a rear surface of said polishing pad (col. 6, lines 11-18 and Figure 11 a).

11. In regards to claim 9 feature "a segmented anode disposed between a rear surface of said wafer and said wafer carrier," Uzoh et al. does not specifically teach this feature.

12. However, Uzoh et al. does teach a segmented anode disposed between said wafer and said wafer carrier (Fig. 8-10), particularly between the side of the wafer and the inside portion of the wafer carrier. While Uzoh et al. does not specifically teach a segmented anode disposed between a rear surface of said wafer and said wafer carrier, it would have been obvious to one of ordinary skill in the art at the time of invention to rearrange the location of the segmented anode to between the rear surface of the wafer

and the wafer carrier in Uzoh et al.'s apparatus because the location of the anode doesn't not change the operation of the apparatus. See MPEP 2144.04 VI.

13. In regards to claim 9 feature "said polishing pad having properties that may be changed by a power supply to optimize polish rate and polish selectivity for different materials, said properties comprising: hardness, stiffness, porosity, abrasiveness, and absorbance," Uzoh et al. inherently discloses a polishing pad capable of having properties that may be changed by a power supply to optimize polish rate and polish selectivity for different materials, said properties comprising: hardness, stiffness, porosity, abrasiveness, and absorbance. Since no special features are described about the instant polishing pad, Uzoh et al.'s. description of a conventional polishing pad (col. 5, line 42 to col. 6, line 25) would be inherently capable of having the claimed properties.

14. Regarding claim 10, Uzoh teaches that the wafer comprises a continuous and conductive surface layer (18, see column 1, lines 38-41).

15. Regarding claims 16-28, voltage (Column 5, lines 23-33). Uzoh teaches that the computer is used to control the This computer would be capable of performing all the claimed functions, including optimizing polishing rates, varying voltage as a function of any parameter, and controlling the voltage by feedback, feedforward, differential and integral control. Thus, these claims are not given any patentable weight because they merely describe the manner in which the apparatus is to be used, but they do not add any structure to the apparatus. See MPEP 2114.

Conclusion

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS


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